



UNIVERSITI PUTRA MALAYSIA

**PRODUCTIVITY , RESOURCE USE EFFICIENCY AND CROPPING
PATTERNS: AN ECONOMIC STUDY OF TRANSMIGRANTS IN
SUMATRA, INDONESIA**


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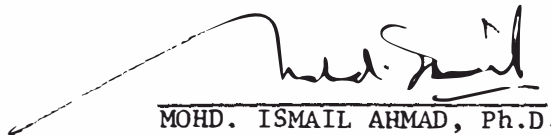
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PRODUCTIVITY, RESOURCE USE EFFICIENCY AND CROPPING PATTERNS:
AN ECONOMIC STUDY OF TRANSMIGRANTS IN SUMATRA, INDONESIA

By

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A thesis submitted in partial fulfilment
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Dedicated to

my parents, my wife and son:

Mr. and Mrs. Djajaatmadja,

Mr. and Mrs. R. Djayaprawira,

Linda,

Ibnu Rizal.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	viii
ABSTRACT	xvii
I. INTRODUCTION	I
Background of the Study	I
Problems	10
Objectives of the Study	12
Hypotheses	13
II. LITERATURE REVIEW	14
Resource Use Analysis and Cobb-Douglas Production Function	14
Alternative Approaches and Other Functional Forms	24
Comparison of Functional Forms	27
III. METHODOLOGY	30
Production Function, Productivity and Efficiency of Resource Use	30
Specification of Production Function Model and Measurement of Variables	40
Data Sources	52



	Page
IV. BACKGROUND INFORMATION ON TRANSMIGRATION AREA WAY ABUNG II	54
Population	55
Climate and Rainfall	57
Vegetation and Soil	60
Water Irrigation	61
Crops and Land Use	62
Transportation	63
The Settlement Pattern	65
Rural Market	65
V. CHARACTERISTIC OF RESPONDENTS	68
Distribution of Respondents	68
Resource Ownership	85
VI. PRODUCTIVITY AND PRODUCTION SYSTEM: A DESCRIPTIVE ANALYSIS	99
Cropping Pattern	99
Input Use	104
Productivity	124
VII. FARM PRODUCTION FUNCTION AND RESOURCE USE EFFICIENCY	128
Production Function	128
Resource Use Efficiency Analysis	172
Returns to Labour	192



	Page
VIII. SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS	196
Summary and Conclusions	196
Policy Implication	212
Limitation of the Study and Suggestion for Future Work	216
BIBLIOGRAPHY	218
APPENDICES	223



LIST OF TABLES

Table		Page
I-1	Transmigration Project in Indonesia by Province, 1950 - 1972.	4
I-2	Number of Transmigrants in Terms of Arrival in Lampung Province.	4
IV-1	Population Number and Density Per Square Kilometer by Regency in the Lampung Province 1974 - 1979.	56
IV-2	Number of Farming Households by Regency in Lampung Province, 1973.	56
IV-3	Average Family Size in Transmigration Project Way Abung II, 1980.	58
IV-4	The Age Composition of Population in Transmigration Project Way Abung II, 1980.	58
IV-5	Rainfall, Rainy Days and Average Temperature at the Manggala Station.	59
IV-6	Some of the Agricultural Commodities Produced in Transmigration Project Way Abung II, 1980.	64
IV-7	Distance of Each Village in Transmigration Project Way Abung II/1 to Coordinator Village (Daya Murni).	64
IV-8	Distance of Each Village in Transmigration Project Way Abung II/2 to Coordinator Village (Pulung Kencana).	66
IV-9	The Market Area of the Central Markets in the Vicinity of the Transmigration Project Way Abung II.	66



Table		Page
V-1	Number of Respondents in terms of the Original Province and Original Occupation in Transmigration Project Way Abung II, 1981.	69
V-2	Number of Respondents in Terms of the Original Province and Age Category in Transmigration Project Way Abung II, 1981.	71
V-3	Number of Respondents in Terms of the Original Province and Transmigrant Status in Transmigration Project Way Abung II, 1981.	72
V-4	Number of Respondents in Terms of Transmigrant Status and The Original Occupation in Transmigration Project Way Abung II, 1981.	74
V-5	Number of Respondents in Terms of Length of Stay and Transmigrant Status in Transmigration Project Way Abung II, 1981.	74
V-6	Number of Respondents in Terms of Land Holding Size and Transmigrant Status in Transmigration Project Way Abung II, 1981.	77
V-7	Number of Respondents in Terms of Family Size and Total Land Holding Cultivated Categories in Transmigration Project Way Abung II, 1981.	77
V-8	Number of Respondents in Terms of Family Size and Transmigrant Status in Transmigration Project Way Abung II, 1981.	79
V-9	Number of Respondents in Terms of Total Land Holding Cultivated and Transmigrant Status in Transmigration Project Way Abung II, 1981.	79

Table		Page
V-10	Number of Respondents in Terms of Cropping Pattern and Transmigrant Status in Transmigration Project Way Abung II, 1981.	81
V-11	Number of Respondents in Terms of Cropping Pattern and Kind of Village in Transmigration Project Way Abung II, 1981.	84
V-12	Number of Respondents in Terms of Kind of Village and Transmigrant Status in Transmigration Project Way Abung II, 1981.	86
V-13	Number of Respondents in Terms of Cropping Pattern and Family Size in Transmigration Project Way Abung II, 1981.	87
V-14	Descriptive Statistics of Various Resources Owned by Respondents in Transmigration Project Way Abung II, 1981.	89
V-15	Average Percentage of Land Holding Cultivated by Land Holding Category and Transmigrant Status in Transmigration Project Way Abung II, 1981.	91
V-16	Land Ownership Based On Family Size Category in Transmigration Project Way Abung II, 1981.	94
V-17	Average Length of Stay in Terms of Transmigrant Status in Transmigration Project Way Abung II, 1981.	94
V-18	Average Availability of Family Labour Based On Status of Transmigrant in Transmigration Project Way Abung II, 1981.	96

Table		Page
V-19	Average Availability of Family Labour Based On Family Size Category in Transmigration Project Way Abung II, 1981.	96
V-20	Average Availability of Family Labour Based On Cropping Pattern in Transmigration Project Way Abung II, 1981.	98
VI-1	Percentage of Respondents Who Chose Certain Crops in The Study Area, 1981.	100
VI-2	Average Labour Used Per Hectare Per Year by Cropping Pattern in Transmigration Project Way Abung II, 1981.	106
VI-3	Average Labour Used Per Hectare (Mandays) by Status of Transmigrant in Transmigration Project Way Abung II, 1981.	108
VI-4	Average Labour Used Per Hectare (Mandays) by Farm Size Category in Transmigration Project Way Abung II, 1981.	110
VI-5	Family and Hired Labour Used Per Hectare Per Year in Terms of Various Respondent Groups in Transmigration Project Way Abung II, 1981.	112
VI-6	Average Fertilizer Used Per Hectare by Cropping Pattern in Transmigration Project Way Abung II, 1981.	114
VI-7	Average Fertilizer Used Per Hectare by Status of Transmigrant in Transmigration Project Way Abung II, 1981.	116

Table		Page
VI-8	Average Fertilizer Used Per Hectare by Farm Size Category in Transmigration Project Way Abung II, 1981.	117
VI-9	Average Seed and Insecticide Used Per Hectare by Cropping Pattern in Transmigration Project Way Abung II, 1981.	119
VI-10	Average Value of Total Seed and Insecticide Used Per Hectare by Cropping Pattern in Transmigration Project Way Abung II, 1981.	120
VI-11	Average Value of Total Seed and Insecticide Used Per Hectare by Status of Transmigrant in Transmigration Project Way Abung II, 1981.	122
VI-12	Average Value of Total Seed and Insecticide Used Per Hectare by Farm Size Category in Transmigration Project Way Abung II, 1981.	122
VI-13	Average Yield and Gross Returns Per Hectare by Cropping Pattern in Transmigration Project Way Abung II, 1981.	125
VI-14	Average Gross Returns Per Hectare by Status of Transmigrant in Transmigration Project Way Abung II, 1981.	127
VI-15	Average Gross Returns Per Hectare by Farm Size Category in Transmigration Project Way Abung II, 1981.	127
VII-1	Estimation of Cobb-Douglas Production Function Per Farm for All Respondents in Transmigration Project Way Abung II, 1981.	132

Table		Page
VII-2	Estimation of Cobb-Douglas Production Function Per Hectare for All Respondents in Transmigration Project Way Abung II, 1981.	135
VII-3	Estimation of Cobb-Douglas Production Function Per Farm for General Transmigrant in Transmigration Project Way Abung II, 1981.	138
VII-4	Estimation of Cobb-Douglas Production Function Per Hectare for General Transmigrants in Transmigration Project Way Abung II, 1981.	139
VII-5	Estimation of Cobb-Douglas Production Function Per Farm for Spontaneous Transmigrants in Transmigration Project Way Abung II, 1981.	141
VII-6	Estimation of Cobb-Douglas Production Function Per Hectare for Spontaneous Transmigrants in Transmigration Project Way Abung II, 1981.	142
VII-7	Estimation of Cobb-Douglas Production Function Per Farm for Cropping Pattern A (Paddy + Corn + Cassava) in Transmigration Project Way Abung II, 1981.	145
VII-8	Estimation of Cobb-Douglas Production Function Per Hectare for Cropping Pattern A (Paddy + Corn + Cassava) in Transmigration Project Way Abung II, 1981.	146
VII-9	Estimation of Cobb-Douglas Production Function Per Farm for Cropping Pattern B (Paddy + Cassava) in Transmigration Project Way Abung II, 1981.	148

Table		Page
VII-10	Estimation of Cobb-Douglas Production Function Per Hectare for Cropping Pattern B (Paddy + Cassava) in Transmigration Project Way Abung II, 1981	149
VII-11	Estimation of Cobb-Douglas Production Function Per Farm for Cropping Pattern C (Cassava) in Transmigration Project Way Abung II, 1981.	151
VII-12	Estimation of Cobb-Douglas Production Function Per Hectare for Cropping Pattern C (Cassava) in Transmigration Project Way Abung II, 1981.	152
VII-13	Estimation of Cobb-Douglas Production Function Per Farm for Determining The Differences of Intercepts Among Cropping Patterns in Transmigration Project way Abung II, 1981.	157
VII-14	Estimation of Cobb-Douglas Production Function Per Hectare for Determining The Differences of Intercepts Among Cropping Patterns in Transmigration Project Way Abung II, 1981.	158
VII-15	Intercepts for The Various Cropping Patterns in Transmigration Project Way Abung II, 1981.	159
VII-16	Estimation of Cobb-Douglas Production Function Per Farm for Determining Differences of Production Function Between The Small (<0.67 Hectare) and Large (>0.67 Hectare) Farm Size in Transmigration Project Way Abung II, 1981.	164
VII-17	Estimation of Cobb-Douglas Production Function Per Farm for The Small Farm Size Group (<0.67 Hectare) in Transmigration Project Way Abung II, 1981.	166

Table		Page
VII-18	Estimation of Cobb-Douglas Production Function Per Farm for The Small Farm Size Group (<0.67 Hectare) in Transmigration Project Way Abung II, 1981.	167
VII-19	Estimation of Cobb-Douglas Production Function Per Hectare for The Large Farm Size Group (>0.67 Hectare) in Transmigration Project Way Abung II, 1981.	170
VII-20	Estimation of Cobb-Douglas Production Function Per Hectare for The Large Farm Size Group (>0.67 Hectare) in Transmigration Project Way Abung II, 1981.	171
VII-21	Geometric Means of Gross Returns and Various Inputs Used in Terms of Status of Transmigrant in Transmigration Project Way Abung II, 1981.	176
VII-22	Geometric Means of Gross Returns and Various Inputs Used in Terms of Farm Size Categories in Transmigration Project Way Abung II, 1981.	177
VII-23	Geometric Means of Gross Returns and Various Inputs Used for Three Main Cropping Patterns in Transmigration Project Way Abung II, 1981.	178
VII-24	Geometric Means of Gross Returns and Various Inputs Used for Other Cropping Patterns in Transmigration Project Way Abung II, 1981.	179
VII-25	Marginal Value Products of Inputs at the Geometric Mean Level in Transmigration Project Way Abung II, 1981.	182

Table		Page
VII-26	Ratios of Marginal Value Product (MVP) to Factor Price for All Respondents in Transmigration Project Way Abung II, 1981.	184
VII-27	Ratios of Marginal Value Product (MVP) to Factor Price Based on Various Transmigrant Groups in Transmigration Project Way Abung II, 1981.	186
VII-28	Returns to Labour Based on Various Groups of Transmigrants in Transmigration Project Way Abung II, 1981.	194

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by

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Faculty : Resource Economics and Agribusiness

The objectives of the study were to determine the
relationships among factors of production and to examine
the influence of status of transmigrant, cropping pattern
and farm size on the productivity and efficiency of
resource use in transmigrant farms in Sumatra, Indonesia.

The Cobb-Douglas production function was fitted to
estimate the input-output relationships for 295 transmigrant
respondents based on their transmigrant status, cropping
pattern and farm size in the Way Abung II Transmigration
Project. However, for comparison of results, the Translog
model was also fitted. The results of the Translog model
was no better than those of the Cobb-Douglas model.



Farm production process in the study area exhibit constant returns to scale. Productivity varies with cropping patterns.

All inputs, except seed, are used inefficiently on the average farm. Land and materials used on crop maintenance are too low relative to the optimal level because of the lack of capital. The use of labour exceeds the optimum level, because family labour is largely used and surplus family labour is common. The reallocation of input use would enhance agricultural productivity and result in higher incomes. Efficiency of input use varies with transmigrant status, farm size and cropping pattern.

Returns to labour for farm production activity in the area, except for those farms adopting cropping pattern H (Paddy + Corn + Cassava + Peanuts), are lower than the wages obtainable from off-farm activity.

Transmigrants should be steered into selecting cropping patterns that produce high returns. Cropping pattern H has the highest gross returns/gross margins per hectare but only two per cent of the respondents chose this cropping pattern. The importance of agricultural credits, agricultural extension, and provision of marketing and infrastructural facilities to encourage the choice of such cropping patterns, so as to maximise resource use is evident from this study.

I. INTRODUCTION

Background of The Study

Indonesia is a country faced with population distribution problems. The Population Census in 1980 indicated that most of the population (61.88%) are in Java and Madura islands, but these islands make up only 6.89 per cent of the total area of Indonesia. The population density of these islands according to this census is 690 persons per square kilometer (Amirda and Wismoyo, 1980).

As a consequence of population concentration in Java, problems have arisen in agricultural land ownership. The land owned per farmer in Java has become smaller and smaller. Mursito (1979) reported that about 57.4 per cent of farmers in Java owned land no more than 0.5 hectare, about 24.8 per cent owned 0.5 to 1.0 hectare and only about 17.8 per cent owned land more than one hectare. The problem is becoming more acute with the high population growth rate (2%/Year). Food shortages, lack of employment, low income and lack of housing are other associated problems of the high population growth rate. The Indonesian economy is still an agricultural economy with more

than 80 per cent of the population living in the agricultural sector.

Concern over the high population in Java has existed since the Colonial Period. During that time (beginning 1905) the Dutch Colonial Government began to move people from Java to other islands, especially to Sumatra. This effort is referred to as the "Dutch Colonization Policy". Its aim was to establish "Colonies" of settlers from Java to the other islands. The policy was motivated to a certain extent by the desire to relieve population pressure in Java, but the Dutch Government was undoubtedly aware of the advantages that could be gained in later years from a larger supply of labour in the other islands of the archipelago, particularly in Sumatra. It was no coincidence that interest in moving farmers from the rural part of Java appeared at the time when foreign companies were beginning to establish plantations in Sumatra. After the Dutch entrepreneurs spread their wings to islands other than Java, specially Sumatra, the Government of the Dutch Indies saw the need for a supply of cheap coolie labour in those islands.

Most of the Dutch settlements were made in the Residence of Lampung in Southern Sumatra. The greater percentage of people moved to colonization settlements between 1905 and 1941 went to areas where three major projects were established:



Gedung Tataan, Kota Agung and Sukadana. In 1905 about 115 families were settled in the Gedong Tataan District and, as more people were transferred each year, more land was opened up and new villages were established (Hardjono, 1977). Between 1937 and 1941 settlements were also established in Sulawesi and Kalimantan.

The Government, after Independence, is continuing this program with some changes in policy. The effort now is referred as the "Transmigration Project". According to this program, transmigration is considered not only as a movement of people but also as a part of Rural Development. The main objective of the Transmigration Program is to increase the transmigrants' welfare. The program also has the additional objective of employment creation, regional development and the strengthening of national defence. Through the transmigration program residents from Java have been moved to Sumatra, Kalimantan, Sulawesi, Maluku and Irian Jaya.

Looking at the distribution of the transmigration project in terms of number of projects, area and transmigrants in various provinces, it is seen in Table I-1, that Lampung Province is the leading province with 24 projects covering an area of 252,143.5 hectares and 213,332 transmigrants. In 1979 transmigrants in Lampung Province numbered 317,775 as shown in Table I-2.

TABLE I-1. TRANSMIGRATION PROJECT IN INDONESIA BY PROVINCE,
1950 - 1972.

Province	Number of Project	Area in Hectares	Number of Transmigrants
1. Lampung	24	252,143.5	213,332
2. Bengkulu	7	14,500	8,790
3. South Sumatra	8	57,700	82,800
4. Jambi	3	4,000	5,058
5. Riau	2	4,100	1,782
6. West Sumatra	13	44,186	17,786
7. North Sumatra	4	6,477	7,211
8. Aceh	2	22,172	1,186
9. West Kalimantan	8	69,200	7,254
10. South Kalimantan	7	15,501	12,117
11. East Kalimantan	20	52,593	23,710
12. Central Kalimantan	4	7,200	7,434
13. North Sulawesi	3	38,200	7,076
14. Central Sulawesi	7	43,071.5	12,416
15. South Sulawesi	3	18,538	4,767
16. South-east Sulawesi	3	2,176	2,889
17. Maluku	2	1,400	1,117
18. Irian Jaya	4	-	728
T O T A L	124	653,158	417,453

Source: Hardjono, J. M. 1977. Transmigration in Indonesia.
Oxfo

TABLE I-2. NUMBER OF TRANSMIGRANTS IN TERMS OF ARRIVAL
IN LAMPUNG PROVINCE.

Arrival	Number of Transmigrants	
	Households	Persons
1. Before The First Five Year Development Period (1950-1968)	53,276	221,245
2. The First Five Year Development Period (1969-1974)	15,386	69,656
3. The Second Five Year Development Period (1975-1979)	5,909	26,850
1950 - 1979	74,571	317,755

Source: Institut Pertanian Bogor. 1980a. Monografi Proyek
Transmigrasi Way Abung (Monograph of Transmigration
Project Way Abung). IPB, Bogor. p. 26.